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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/813,681	03/21/2001	Heather Laudan Clark	LE9-00-068	3454

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EXAMINER	
POON, KING Y	

ART UNIT	PAPER NUMBER
2625	

DATE MAILED: 11/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/813,681	CLARK ET AL.	
	Examiner	Art Unit	
	King Y. Poon	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5-9,16,17,19-24,31-34 and 37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5-9,16,17,19-24,31 and 32* is/are rejected.

7)☒ Claim(s) *33,34 and 37* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 February 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-2, 5-7, 16, 17, 19-22, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Debry et al. (US 6,097,498) and Herzog et al (US 4,651,278) (incorporated by reference, column 1, lines 10-15, Debry), Chen et al (US 5,592,683) (incorporated by reference, column 11, lines 10-17, Debry) in view of Dawson (US 5,553,160).

Regarding claim 1: Debry teaches a method of transmitting print data (fig. 2) from a host (18, fig. 3) to a printing device (22, fig. 3, column 4, lines 44-48) for processing, comprising the steps of: (a) dividing the print data (document with different pages, column 4, lines 30-35) into separate data streams (pages, fig. 3, Chen); (a) dividing the data streams into data segments (object container, column 6,lines 63-67, fig. 4); (b) compressing the data segments with a compression algorithm (page description language, column 4, lines 30-35; page description language of Debry are compressed print data); (c) creating a print header (WOCC, column 9, line 30-35, column 11, lines 20-32, column 6, lines 35-37; also see column 7, 8 of Herzog) containing instructions for processing each data segment (column 8, lines 43-45, Herzog), wherein the print header is embedded within each data segment ; (d) sending

the print header from the host to a printing device (fig. 2, fig. 3); (e) sending the data segments from the host to a printing device (fig. 2, fig. 3); (f) decompressing the data segments (46, 48, fig. 3); (g) allocating printer memory space to store the decompressed data segment (column 5, lines 20-25; the output of the interpreter is added to one or more logical page; in doing so, the logical page must be stored (inherent) in a memory space); and (h) processing the decompressed data segments (44, fig. 3) according to the instructions contained in the print header to produce a printed item.

Debry does not teach the header including information describes the size of data in the data segment in compressed or uncompressed form.

Dawson, in the same area of using header to provide information about data transmitted, teaches it is well known in the art that header including information describes the size of data in the data segment in compressed or uncompressed form (column 8, lines 8-20).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Debry to include: header including information describes the size of data in the data segment in compressed or uncompressed form.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Debry by the teaching of Dawson because of the following reasons: (a) since the header is used to provide information about the data being stored, the more information being provided, the less process is to be performed

on the receiving side; and (a) it would have help the receiving side of quickly determining a memory size to stored the received data without processing the data to found out the data size.

Regarding claim 2: Debry teaches wherein the step of compressing the data segments is performed using different compression algorithms for different segments (column 5, lines 10-25, column 4, lines 30-35).

Regarding claim 5: Debry teaches the step of allocating memory partitions according to the size of each uncompressed data segment, such that the size of the partition is similar to the size of the decompressed data segment. (inherent properties of storing data by a processor; if a processor is putting X amount of data into a memory, the processor is putting X amount of data into the memory space).

Regarding claim 6: Debry teaches the step of creating a print header further comprises the step of embedding within the print header information about the relative positions (column 5, lines 23-24, column 6, lines 36-37) of a color (column 7, line 56, Herzog) to be applied to a printing medium during the printing process.

Regarding claim 7: Debry teaches wherein the printing device is an inkjet printer (column 63, line 68, Herzog) with color (column 7, line 56, Herzog) capability.

Regarding claim 16: Debry teaches a system (fig. 2, fig. 3) for processing print data comprising a print data host (18, fig. 3) wherein the print data host performs the steps of: (a) dividing the print data (document with different pages, column 4, lines 30-35) into separate data streams (pages, fig. 3, Chen); (a) dividing the data streams into data segments (object container, column 6,lines 63-67, fig. 4); (b) compressing the data

segments with a compression algorithm (page description language, column 4, lines 30-35; page description language are compressed print data); (c) creating a print header (WOCC, column 9, line 30-35, column 11, lines 20-32, column 6, lines 35-37; also see column 7, 8 of Herzog) containing instructions for processing each data segment (column 8, lines 43-45, Herzog), wherein the print data host embeds a header in each data segment; (d) sending the print header from the host to a printing device (fig. 2, fig. 3); (e) sending the data segments from the host to a printing device (fig. 2, fig. 3); and a printing device (22, fig. 3, column 4, lines 44-48), wherein the printing device performs the steps of (f) decompressing the data segments (46, 48, fig. 3) received from the print data host; (g) allocating printer memory space to store the decompressed data segment (column 5, lines 20-25; the output of the interpreter is added to one or more logical page; in doing so, the logical page must be stored (inherent) in a memory space); and (h) processing the decompressed data segments (44, fig. 3) according to the instructions contained in the print header to produce a printed item.

Debry does not teach the header including information describes the size of data in the data segment in compressed or uncompressed form.

Dawson, in the same area of using header to provide information about data transmitted, teaches it is well known in the art that header including information describes the size of data in the data segment in compressed or uncompressed form (column 8, lines 8-20).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Debry to include: header including

information describes the size of data in the data segment in compressed or uncompressed form.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Debry by the teaching of Dawson because of the following reasons: (a) since the header is used to provide information about the data being stored, the more information being provided, the less process is to be performed on the receiving side; and (a) it would have help the receiving side of quickly determining a memory size to stored the received data without processing the data to found out the data size.

Regarding claim 17: Debry teaches wherein the print data host compresses the data segments using different compression algorithms for different segments (column 5, lines 10-25, column 4, lines 30-35).

Regarding claim 19: Debry teaches wherein the print data host embeds a header in each data segment (column 11, lines 19-32), the header including information that describes the compression scheme (column 11, lines 25-28) employed.

Regarding claim 20: Debry teaches wherein the print data host embeds within the print header information about the relative positions (column 5, lines 23-24, column 6, lines 36-37) of each color (column 7, line 56, Herzog) to be applied to a printing medium during the printing process.

Regarding claim 21: Debry teaches wherein the printing device host (controller fig. 3) allocates memory partitions for storing decompressed data according to the size of each uncompressed data segment, such that the size of the partition is similar to the

size of the decompressed data segment. (inherent properties of storing data by a processor; if a processor is putting X amount of data into a memory, the processor is putting X amount of data into the memory space).

Regarding claim 22: Debry teaches wherein the printing device is an inkjet printer (column 63, line 68, Herzog) with color (column 7, line 56, Herzog) capability.

Regarding claims 31: Debry teaches a system (fig. 2, fig. 3) for processing print data comprising a print data host (18, fig. 3) wherein the print data host performs the steps of: (a) dividing the print data (document with different pages, column 4, lines 30-35) into separate data streams (pages, fig. 3, Chen); (a) dividing the data streams into data segments (object container, column 6,lines 63-67, fig. 4); (b) compressing the data segments with a compression algorithm (page description language, column 4, lines 30-35; page description language are compressed print data); (c) creating a print header (WOCC, column 9, line 30-35, column 11, lines 20-32, column 6, lines 35-37; also see column 7, 8 of Herzog) containing instructions for processing each data segment (column 8, lines 43-45, Herzog) wherein the print header is embedded within each data segment; (d) sending the print header from the host to a printing device (fig. 2, fig. 3); (e) sending the data segments from the host to a printing device (fig. 2, fig. 3); and a printing device (22, fig. 3, column 4, lines 44-48), wherein the printing device performs the steps of (f) decompressing the data segments (46, 48, fig. 3) received from the print data host; and (g) processing the decompressed data segments (44, fig. 3) according to the instructions contained in the print header to produce a printed item.

Debry does not teach the header including information describes the size of data in the data segment in compressed or uncompressed form.

Dawson, in the same area of using header to provide information about data transmitted, teaches it is well known in the art that header including information describes the size of data in the data segment in compressed or uncompressed form (column 8, lines 8-20).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Debry to include: header including information describes the size of data in the data segment in compressed or uncompressed form.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Debry by the teaching of Dawson because of the following reasons: (a) since the header is used to provide information about the data being stored, the more information being provided, the less process is to be performed on the receiving side; and (a) it would have help the receiving side of quickly determining a memory size to stored the received data without processing the data to found out the data size.

3. Claims 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Debry et al. (US 6,097,498) and Herzog et al (US 4,651,278)(incorporated by reference, column 1, lines 10-15, Debry), Chen et al (US 5,592,683) (incorporated by reference, column 11, lines 10-17, Debry) in view of Thompson (US 4,463,374).

Regarding claims 32: Debry teaches a system (fig. 2, fig. 3) for processing print data comprising a print data host (18, fig. 3) wherein the print data host performs the steps of: (a) dividing the print data (document with different pages, column 4, lines 30-35) into separate data streams (pages, fig. 3, Chen); (a) dividing the data streams into data segments (object container, column 6,lines 63-67, fig. 4); (b) compressing the data segments with a compression algorithm (page description language, column 4, lines 30-35; page description language are compressed print data); (c) creating a print header (WOCC, column 9, line 30-35, column 11, lines 20-32, column 6, lines 35-37; also see column 7, 8 of Herzog) containing instructions for processing each data segment (column 8, lines 43-45, Herzog); (d) sending the print header from the host to a printing device (fig. 2, fig. 3); (e) sending the data segments from the host to a printing device (fig. 2, fig. 3); and a printing device (22, fig. 3, column 4, lines 44-48), wherein the printing device performs the steps of (f) decompressing the data segments (46, 48, fig. 3) received from the print data host; and (g) processing the decompressed data segments (44, fig. 3) according to the instructions contained in the print header to produce a printed item, wherein the printing device is an inkjet printer (column 63, line 68, Herzog) with color (column 7, line 56, Herzog) capability.

Debry does not teach dividing the print data into streams is performed such that each of the streams contained only print data for one color of ink.

Thompson, in the same area of print data stream, teaches it is well known in the art that print data are divided into streams such that each of the streams contained only print data for one color of ink (column 10, lines 35-47).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Debry to include: the host dividing the print data into streams such that each of the streams contained only print data for one color of ink.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Debry by the teaching of Thompson because of the following reasons: (a) it would have reduced the time the printer processing the print job for most inkjet printers print different colors a row of a time; and (b) it would have simplified the circuit of the ink jet printer to reduce cost and increase printing speed.

4. Claims 8, 9, 23, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Debry et al. (US 6,097,498) and Herzog et al (US 4,651,278)(incorporated by reference, column 1, lines 10-15, Debry), Chen et al (US 5,592,683) (incorporated by reference, column 11, lines 10-17, Debry) in view of Dawson (US 5,553,160) as applied to claims 1, 7, 16, 22 above, and further in view of Thompson (US 4,463,374).

Regarding claims 8, 23: Debry does not teach dividing the print data into streams is performed such that each of the streams contained only print data for one color of ink.

Thompson, in the same area of print data stream, teaches it is well known in the art that print data are divided into streams such that each of the streams contained only print data for one color of ink (column 10, lines 35-47).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Debry to include: dividing the print data into streams is performed such that each of the streams contained only print data for one color of ink.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified Debry by the teaching of Thompson because of the following reasons: (a) it would have reduced the time the printer processing the print job for most inkjet printers print different colors a row of a time; and (b) it would have simplified the circuit of the ink jet printer to reduce cost and increase printing speed.

Regarding claims 9, 24: Inherently, all ink jet printing required calculating the beginning and ending points for each color of ink applied to the surface of the printing medium by the printing device during the printing of a swath/scan line. An inkjet printer cannot print properly without knowing when and where to eject the ink.

Furthermore, Thompson teaches a printer control that calculating the beginning and ending points for each color of ink applied to the surface of the printing medium by the printing device during the printing of a swath/scan line (column 1, lines 60-69, column 2, lines 1-15, column 1, lines 32-35).

Allowable Subject Matter

5. Claims 33, 34, 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments filed 5/22/2006 have been fully considered but they are not persuasive.

With respect to applicant' s argument that Derby does not teach dividing a group of commands into smaller unit; therefore, does not teach dividing data streams into data segment, has been considered.

In reply: applicant, page 8, line 25 teaches the data being transmitted is in the sequence of C1, M1, Y1, C2, M2 etc. According to the specification, there are no separate data streams (different paths or channels of data flow) in the present invention. The data streams of the present invention are segments of data that are classified as a group.

The examiner interprets the single sequence of C1, M1, Y1, C2, M2 as the single data sequence disclosed in fig. 3. of Debry. In the sequence of data of the present application, there are segments such as C1, C2, etc. In the sequence of data shown in fig. 2, fig. 3, Drbry; there are segments called containers, column 6, lines 63-67, fig. 4. Drbry, column 11, lines 10-20 relies on Chen to teaches how a logical page was build.

Chen, fig. 3 clearly teaches IPDS command of Drbry are divided into pages. The examiner interprets the data streams of the present invention equivalent to the print pages of Debry.

The claim is only claiming dividing the data stream of two times, not three times. The first division of Debry happens when the print data are divided into pages represented by IPDS command. The second division happens when N segment are divided by containers within a particular page (fig. 3, Chen, column 11, lines 20-32, 53-67, column 12, lines 1-15, Debry, current page, column 10, lines 40-50, Herzog). Debry's invention requires dividing a group of commands of the container into smaller unit to meet the claimed limitation only if applicant claims triple dividing. Applicant on the bottom of page 10, argument filed on 5/22/2006, point out applicant is claiming doubly dividing, not triple dividing.

With respect to applicant's argument that Debry disclosing page description languages and does not disclose data compression; has been considered.

In reply, the examiner quoted the page description languages of Debry (such as Postscript, column 5, lines 19-23) that is used for communication are compressed data are based on the inherent properties of page description language.

Examiner assumes that a person (such as Debry and the present inventor) in the area of making inventions for communication of print data used for a printer must know that page descriptive language, although is a programming language, inherently has compression standard used for compressing print data (please see column 33, lines 30-40, Engeldrum, US 6,963,668).

It is also common knowledge in data communication field that the reason for compression is to reduced the amount of data that is being transmitted or stored to reduce the needs of memories (which would cost money) and to conserve valuable communication bandwidth and to increase the speed of communicating.

MPEP 2112 states: "The inherent teaching of a prior art reference, a question of fact, arises both in the context of anticipation and obviousness."... (Fed. Cir. 1995)(affirmed a 35 U.S.C. 103 rejection based in part on inherently disclosure in one of the reference).

MPEP 2144 states: The rationale to modify or combine the prior art does not have to be expressly stated in the prior art; the rationale may be expressly or impliedly contained in the prior art or it may be reasoned from knowledge generally available to one of ordinary skill in the art...

Therefore, the examiner reasonably states that Debry's page descriptive language data streams used for communication are compressed data based on the fact that page descriptive language (e.g., Postscript) inherently teaches data compression and it would have been obvious to a person with ordinary skill in the art to compressed the data of Debry that is used for communication.

In short, the process of converting print data into PDL of Debry = compression.

The process of interpreting PDL to form print data of Debry = decompression.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chambers, IV (US 5,155,484) and Smutek et al. (US 4,553,206) disclosed it is well known in the art that headers includes information describes the size of data in compressed and uncompressed form.

Engeldrum (US 6,963,668) disclosed that page descriptive language such as Postscript and PDF of Debry inherently has a compression standard used in data compression. (column 33, lines 30-40).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to King Y. Poon whose telephone number is 571-272-7440. The examiner can normally be reached on Mon-Fri 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on 571-272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

November 8, 2006

KING Y. POON
PRIMARY EXAMINER